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Secção Autónoma de Ciências Sociais, Jurídicas e Políticas

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INTERNATIONALIZATION OF CHINESE HIGHER EDUCATION THROUGH INTERNATIONAL ACADEMIC COLLABORATION

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dissertação apresentada à Universidade de Aveiro para cumprimento dos requisitos necessários à obtenção do grau de Mestre em mestrado europeu em Ensino Superior (Erasmus Mundus), realizada sob a orientação científica do Prof. Dr. Rui Armando Gomes Santiago, Professor Associado do Departamento de Secção Autónoma de Ciências Sociais, Jurídicas e Políticas da Universidade de Aveiro

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Aveiro, October 2006

Lan Lan

palavras-chave

Colaboração internacional académica, Ensino Superior Chinês, Internacionalização, Governo Central Chinês, Ensino Superior

resumo

A internacionalização no ensino superior tornou-se uma grande preocupação tanto para o Governo Central Chinês como para as Instituições Chinesas de Ensino Superior. Esta tese analisa a implementação de colaboração internacional, como método da Internacionalização Chinesa no Ensino Superior, entre universidades Chinesas e demais universidades estrangeiras.

As questões fundamentais são "Será que a colaboração académica internacional ajuda a incrementar o processo de internacionalização do ensino superior na China? E até que nível esta colaboração pode acelerar este processo? Foram desenvolvidos casos de estudo em três Instituições de Ensino Superior para explicar as questões enunciadas.

A conclusão desta tese é que o processo de Internacionalização do Ensino Superior Chinês foi/ou está sendo acelerado pela implementação do método "Colaboração Internacional Académica". No entanto, ainda existem alguns efeitos negativos tais como a internacionalização heterogénea no território Chinês e o problema do *brain drain*, isto é, a perda de activos intelectuais, que necessita de maior atenção.

keywords

International academic collaboration, Chinese higher education, internationalization, Chinese central government, higher education institution

abstract

Higher education internationalization has become a crucial concern both for Chinese central government and for Chinese higher education institutions. This thesis examines the implementation of international academic collaboration, as a method of internationalizing Chinese higher education, between Chinese universities and those universities abroad.

The main research questions are “Does international academic collaboration help to speed-up the process of higher education internationalization in China? And to what extent could international academic collaboration accelerate this process? Case studies in three Chinese higher education institutions have been done as explanations of those questions raised above.

The conclusion of this thesis is that the process of Chinese higher education internationalization has been and/or is being accelerated by employing the method of “international academic collaboration”. However, there are still some negative effects such as the imbalanced development of internationalization in China and the problem of “brain drain” that needed us to take more concern.

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Introduction

The trend of globalization of world economy has been exerting a strong impact on all nations in the past two decades. The impact is not only on the growth of economy, but also on all aspects of life. Higher education as the most responsive sector in different societies is also under the impact of globalization and knowledge economy. Undoubtedly, higher education will take the role in training personnel that are expected in the knowledge economy, and will make the greatest contributions in enhancing the competitiveness of nation's economy in the global world. It thus seems to be an inevitable trend in different countries that internationalizing higher education sector is becoming the most important means for obtaining highly skilled labor force and for increasing knowledge intensive capitals.

As the biggest developing country in the world, China has closed the door to the outside world for hundreds of years. However, China cannot be an exception of eluding the influences of globalization and knowledge economy, and nowadays China is actively responding to the opportunities and challenges presented by globalization. Chinese higher education institutions as the place where advanced knowledge are generated and where highly intellectual people are trained, they are taking an irreplaceable role in the fast development of Chinese economy. As a result, how to internationalize Chinese higher education in order to actively respond to the impacts of globalization and knowledge economy has become the most crucial problem for Chinese central government and higher education institutions as well. A series of strategies for internationalizing Chinese higher education have been adopted and among these strategies, international academic collaboration has been acknowledged by Chinese central government, higher education institutions and the public that it has to a large extent accelerated the process of Chinese higher education internationalization.

By holding the hypothesis of "international academic collaboration can help speed-up the process of internationalization of Chinese higher education", the purpose of this paper is to firstly, review the literatures concerning higher education internationalization by which the theoretical rationales for internationalizing Chinese higher education could be found; secondly, discussing from the national level, national polices and strategies with respect to Chinese higher education internationalization will be presented, while the special interest will be put on the international strategy of improving and strengthening academic collaboration; thirdly, from the institutional level, the research methodology of case studies will be used by which the empirical data about the current situation and strategies of international academic collaboration in three Chinese higher education institutions will be presented, and the extent of Chinese higher education internationalization through academic collaboration could also be researched. Conclusions will be made in the last part of this chapter. Suggestions as well as some recommendations for designing policy alternatives aimed to accelerate the higher education internationalization in west China and for problem concerning the "brain drain" will be given in the last chapter of this paper.

Although Chinese central government takes the main responsibilities for initiating policies, higher education institutions are the main bodies for implementing these policies regarding international academic collaboration and the internationalization of Chinese higher education. These institutions are also taking the roles of exhibiting the academic prestige in the global higher education market. This is the main reason that the research methodology of case studies is used in this paper since higher education institutions are indications of the internationalization level in China. By employing case studies in three Chinese universities, different ways of internationalizing higher education institutions could be explored, including institutional policies and their practical implementation. In the mean time, comparisons of the development level in different regions of China could also be made, which will lead us to think about the urgent problem of "The Western Region Development" in China.

Peking University, University of Science and Technology of China were chosen in the case studies because they are the two universities representing the highest level of academic prestige in China and they are also the places where different modes of international academic collaboration programs are designed and developed. They have the most precise statistics that could be used in exploring the current level of Chinese higher education internationalization. Xiamen University was also chosen in this study because this university could represent the higher education internationalization level in the southeast coast of China. All these made preparations for the further discussion of imbalanced development between southeast China and west China.

There is an expectation that by deeply analyzing the impacts of international academic collaboration on Chinese higher education, government at all levels and higher education institutions in China could to the largest extent utilize the opportunities and reduce the risks emerged in the academic collaboration. Not only for realizing the aim of Chinese higher education internationalization, enhancing the competitiveness of Chinese higher education and eventually expediting the economy development in the global market are becoming the final goals of Chinese central government.

Chapter 1: Literature Review

1.1 Main arguments on the rationales for the internationalization of higher education

Internationalization of higher education is seen as one of the ways a country responds to the impact of globalization, yet at the same time respects the individuality of the nation. There are various reasons for arguing that internationalization will become increasingly important in the higher education sector. First, there are two widely recognized arguments, which have so far served as main driving forces for internationalization:

Academic and professional requirements for graduates increasingly reflect the demands of the globalization of societies, economy and labour markets and thus higher education must provide an adequate preparation for that. These requirements include not only academic and professional knowledge, but also multilingualism, and social and intercultural skills and attitudes.

The level of specialization in research and the size of the investments that are indispensable to certain fields of research and development require collaborative efforts and intensive international cooperation" (Qiang, 2001)

Second, the following two developments are increasingly influencing the international dimension of higher education:

- The recruitment of foreign students has become a significant factor for institutional income and of national economic interest;
- The use of new information and communication technologies in the delivery of education and the involvement of private actors in this mean that national borders and the role of national governments in education become blurred.

The arguments mentioned above virtually served as a framework for the theories about higher education internationalization. Many scholars have presented their own viewpoints on this issue. Aigner et al(1992) suggests that there are three major reasons for the internationalization of higher education: 1. interest in international security; 2. maintenance of economic competitiveness; and 3. fostering of human understanding across nations. Aigner et al points out that these are not absolute or mutually exclusive reasons for internationalization and that they differ greatly in content and emphasis.

Warner (1992) examines the various assumptions and imperatives that underlie or drive the internationalization agenda at different universities. He proposes three different models in an attempt to capture the diverse approaches to the internationalization of a university. In the competitive model, introducing international content into curricula and other elements of campus life is chiefly a means to make students, the institution, and the country more competitive in the global economic marketplace. The liberal model identifies the primary goal of internationalization as self-development in a changing world and/or global education for human relations and citizenship. The social transformation model suggests that the most important goal of internationalization is to give students a deeper awareness of international and intercultural issues related to equity and justice, and to give them the tools to work actively and critically towards social transformation.

Davies states that internationalization is "closely linked with financial reduction, the rise of academic entrepreneurialism and genuine philosophical commitment to cross-cultural perspectives in the advancement and dissemination of knowledge" (Davies 1992, 177). This view reflects the tight fiscal situation facing universities today and places international activity in the context of revenue-producing work.

Knight & De Wit (1995) mention the political and economic rationales (including arguments related to economic growth and investment in the future economy, the

labour market, foreign policy, financial incentives and national educational demand), and educational and cultural rationales (including development of the individual, the international dimension to research and teaching, institution building, quality improvement, and statement on the cultural function). Also Blumenthal et al (1996) discern that internationalization policy can have political, economic, educational, cultural or academic, scientific and technological dimensions. In a later study, Knight (1997) clusters the possible rationales for internationalization into four groups: political, economic, academic and cultural/social, which this author believes is particularly useful to bring a framework and some logic to the discussion of the rationales.

Political Rationale. The political rationale relates to issues concerning the country's position and role as a nation in the world, e.g. security, stability and peace, ideological influence, etc.

Historically, international education was seen as a beneficial tool for foreign policy especially with respect to national security and peace among nations. While this is still a consideration today, it does not have the importance it once did. Education, especially higher education, is often considered as a form of diplomatic investment for future political and economic relations. For example, scholarships for foreign students who are seen as promising future leaders are considered to be effective way of developing an understanding of and perhaps affinity for the sponsoring country. This affinity may prove to be beneficial in future years in terms of diplomatic or business relations. (Knight, 1997, p9)

Economic Rationale. The economic rationale refers to objectives related to either the long-term economic effects, where internationalization of higher education is seen as a contribution to the skilled human resources needed for international competitiveness of the nation, and where foreign graduates are seen as keys to the country's trade relations, or the direct economic benefits, e.g. institutional income and net economic effects of foreign students, etc.

At the institutional level, the economic motive or market orientation is becoming more prevalent as well. A rigorous is now under way as to whether export of education products to international markets

is in fact contributing to the international dimension of teaching, research and service. Clearly, there can be a direct and beneficial relationship between an international market orientation and the internationalization of the primary functions of a university/college or institute… If one is to ensure that improving the quality of higher education is the primary goal of internationalization, not the development of international export markets, it is essential to find the balance between income-generating motives and academic benefits. (Knight, 1997, p10)

Academic Rationale. The academic rationale includes objectives related to the aims and functions of higher education. One of the leading reasons cited for internationalizing higher education sector is the achievement of international academic standards for teaching and research. It is often assumed that by enhancing the international dimension of teaching, research and service, there is value added to the quality of a higher education system. This premise is clearly based on the assumption that internationalization is considered to be central to the mission of the institution and is not a marginalized endeavor. Linked to the notion of enhancing the quality of education is the idea that internationalization is often a positive change agent for institutional building. International activities may serve as catalysts for major institutional planning/review exercises, or help with institution building through the enhancement of the human, technical or management infrastructure system.

Cultural and Social Retionale. The cultural and social rationale concentrates on the role and place of the country's own culture and language and on the importance of understanding foreign languages and culture.

The preservation and promotion of national culture is a strong motivation for those countries which consider internationalization as a way to respect cultural diversity and counter balance the perceived homogenizing effect of globalization. The acknowledgement of cultural and ethnic diversity within and between countries is considered as a strong rationale for the internationalization of a nation's education system. (…) Related to this point is the need for improved intercultural understanding and communication. The preparation of graduates who have a strong knowledge skill base in intercultural

relations and communications is considered by many academics as one of the strongest rationales for internationalizing the teaching/learning experience of students in undergraduate and graduate programs. (Knight, 1997, p11)

Taking Chinese higher education into consideration, there is a shifting emphasis on the various rationales for internationalization in China. Before 1980's, aimed to stabilize the newly-founded Chinese government, strategies for developing Chinese higher education were mostly based on political consideration, and internationalization was focused especially on humanitarian aims of improving understanding between people for peaceful coexistence. Under the influences of economy globalization, Chinese central government has put great concerns on the international competence and competitiveness, and thus the economic rationales become more important. It is felt that international labor markets require the higher education system to deliver graduates with academic, linguistic, and intercultural qualifications that are internationally competitive:

> *"The academic and cultural/social rationales, reflected in measures like the mobility of students and staff, the improvement of the quality of education, a greater compatibility of study programs and degrees, and enhanced knowledge of other languages and cultures, seems all to be derived from the overarching economic rationale of strengthening human resources for international competitiveness."* (Qiang 2001, p254)

1.2 Approaches for higher education internationalization

A review of the literature as well as the practice of international education over the last decade reveals that several major authors have generally used a similar typology of "approaches" (Aigner et al, 1992; Arum & Van de water, 1992: De Wit, 1995; Knight, 1994, 1996, 1997). By "approaches" the authors refer to the stances adopted by persons in leadership positions towards the promotion and implementation of

programs aimed at internationalization. Although the categories of approach the authors use sometimes include overlapping elements, according to Qiang's statement in 2003, there are basically four different approaches being used to describe the concept of internationalization.

The activity approach, which promotes activities such as curriculum, student/faculty exchange, technical assistance and international students. This approach is one that has been most prevalent and is characteristic of the period when one described the international dimension in terms of specific activities or programs. In fact, the activity approach was synonymous with the term of international education in the 1970s and early 1980s. However, by looking at the international dimension as a series of activities, they are prone to be considered as distinct programs in terms of their operation. This often leads to a rather fragmented and uncoordinated approach to internationalization, whereby the relationship, impact and benefits between and among the activities are not taken into consideration.

The competency approach, which emphasizes the development of skills, knowledge, attitudes and values in students, faculty and staff. The issue central to this approach is how generation and transfer of knowledge help to develop competencies in the personnel of the higher education institution so that they become more internationally knowledgeable and interculturally skilled. Thus, in this approach, the development of internationalized curricula and programs is not an end in itself but a means towards developing the appropriate competencies in the students, staff and faculty. While there is a growing interest in the competency approach due to the increasing orientation towards the demands and concerns of the labour market, there is an urgent need for further applied research to identify those competencies which help students to be successful national and international citizens and to contribute to local and global work environments.

The ethos approach, which emphasizes creating a culture or climate that values and supports international/intercultural perspectives and initiatives. This approach relates more to organizational development theories which focus on the creation of a culture or climate within an organization to support a particular set of principles and goals. This approach acknowledges that the international dimension is fundamental to the definition of a university or any other institutions of higher learning, and believes that without a strong belief system and supportive culture, the international dimension of an institution will never be realized. This was also approved by the words of Clark B.R. that said "belief constrains structural change and structure constrains change in belief" (Clark 1983, p. 96)

The process approach, which stresses integration or infusion of an international/intercultural dimension into teaching, research and service through a combination of wide range of activities, policies and procedures. A major concern in this approach is the need to address the sustainability of the international dimension. Therefore, the emphasis is placed on program aspects as well as organizational elements such as policies and procedures.

By employing the strategy of "international academic collaboration", these four approaches could be realized in the internationalization of Chinese higher education. Many international programs between Chinese and foreign higher education institutions have been established. On the one hand, Chinese students and teaching staff will have more chances to study or teach abroad; on the other hand, serving as a supplement of Chinese higher education resources, different modes of international academic collaboration could become an efficient way of satisfying the increasing demand for higher education from Chinese students and their families. What is more important is the fact that these students/staff who participated in the academic collaboration program will become more multi-culturally experienced and thus becoming more competitive in the global labour market. These people will also help in creating a climate that gives support to international perspective in their faculty or

disciplines, and gradually a strong belief system will appear in the Chinese higher education institutions. This is also a process for Chinese higher education institutions to gain reputation and academic prestige in the global higher education market. More and more international students will choose to obtain their academic experiences in China, which will to some extent help to release the financial burden of Chinese central government and higher education institutions in China.

Analyses presented in this chapter have given us the theoretical rationales that Chinese higher education could be internationalized by implementing the strategy of "international academic collaboration". And the realization of the four approaches held by Chinese governments at all levels and Chinese higher education institutions will also depend on the priority given to "international academic collaboration" when national policies are formulated to accelerate the speed of higher education internationalization in China. Either from a national level or from an institutional level, this theoretical framework has proved the feasibility of implementing international academic collaboration in the Chinese context, as an efficient way for internationalizing Chinese higher education. No matter what kinds of approaches are employed, enhancing the reputation of Chinese higher education in the global market and accelerating the economic development in this knowledge economy world are still serving as the final goals of Chinese central government.

Based on the theoretical rationales discussed in this chapter, national policies for developing and strengthening "international academic collaboration" will be introduced in the next chapter, and different modes of "international academic collaboration" in the Chinese context will also be presented. This will give us a clear presentation of policies formulated and implemented for improving academic collaboration in China, by which the speed of Chinese higher education internationalization could be accelerated to a large extent.

Chapter 2: National Policies and Modes of "International Academic Collaboration" in Current Chinese Context

2.1 National polices for developing and strengthening "international academic collaboration" in China

Internationalization of Chinese higher education is high on the agenda of national government at all levels. Since China has been closed to the outside world for a number of years, naturally the frame of references for formulating polices was internally focused. As China opened up in 1978, Chinese government has put their sights to a larger perspective of higher education worldwide. China is moving rapidly to "catch up" with trends in more developed countries by sending its best students and teaching staff overseas, by welcoming foreign students and scholars to Chinese campuses, and to build world-class universities in China by academic collaborating with different higher education institutions and organizations abroad.

Polices and projects initiated by Chinese central government for enhancing international academic collaboration are being or have been designed and implemented. During the past twenty years, policies concerning internationalization of higher education have changed progressively, and the development of these policies can be roughly divided into two phrases:

2.1.1 The first phase: 1978-1992

From 1978 to 1992, government policies and regulations mainly dealt with issues such as dispatching students, scholars, and members of faculties abroad for advanced studies, invitation of foreign scholars and experts to China, and the practice of teaching and learning foreign languages, especially English. These reflected the

urgent demand for professionals and experts with good mastery of advanced knowledge and technology from overseas and a desire for learning from English-speaking countries, partially as a result of China's isolation from the western world for more than 20 years since the Korean War.

In August 1978, the Ministry of Education (MOE), which was renamed the State Education Commission (SEC) in 1985 and then again the Ministry of Education in 1998, issued the first important document on a government program for dispatching more Chinese undergraduate and graduate students abroad. The document defined the principles, requirements, and selection methods. Those who were selected and dispatched abroad were strongly advised to study in the fields of science, engineering, agriculture and medicine (MOE, 1978). To train more manpower at a higher level for the national economy, three years later, the first policy for privately financed study overseas was promulgated by the MOE in 1981. Thus, policies for sending scholars and students abroad fell into the following two categories: One was dealing with scholars, members of faculties and students dispatched for advanced study with full financial aid from the central government, and the other was related to students with private funds.

After 1984, various attempts were made to delegate more authority and responsibilities for dispatching scholars and students abroad to other agencies in the central government, provincial governments, and institutions. In 1986, according to a document issued by the State Education Commission, a new method of selecting visiting scholars and faculty members for advanced study was to be practiced. Namely, instead of being selected, sent and financed only by the SEC, other agencies in the central government, and provincial governments as well as individual universities could also be authorized to choose and dispatch candidates to go abroad. As a result, from the middle of 1980s, publicly financed scholars or faculty members and students going abroad were divided into two categories: those selected and

financed by the SEC and those chosen and supported by other agencies, local governments and higher education institutions (SEC, 1986).

Besides the policy concerning the dispatch of scholars or faculty members and students abroad, there were also policies issued for invitation of foreign professors and experts, introduction and translation of foreign university textbooks, and encouragement of the return of those overseas Chinese scholars and students during this period. A document presented by MOE indicated that at that time, major efforts should be devoted to conducting English-language education (MOE, 1979). It was emphasized that it was urgent to introduce those newer and better foreign textbooks from the United States, Japan, West Germany, the United Kingdom, France, and other countries as quickly as possible in the immediate future, indicating that China had turned to seek western and Japanese academic patterns instead of those of the Soviet Union.

2.1.2 The second phase: 1993 to the present

From 1993, with increasing outflows of Chinese scholars, faculty members and students, more attention has to be paid to such problems as how to encourage those Chinese scholars and students overseas to return, how to attract more foreign students to study in China, how to undertake international academic collaboration in teaching and research, and the internationalization of university curricula.

The importance of a document issued by SEC in 1995 cannot be neglected because it approved and encouraged the cooperation and joint operation of Chinese higher education institutions with foreign institutional partners. It clearly stated that cooperation with foreign higher education institutions should become an important component in China's education policy and should constitute a supplementary part of China's educational programs (SEC, 1995). Another important factor that stimulated the progress of transnational education in China was the speech by the former

Minister of Education, Ms. Chen. In the speech, Minister Chen stressed that it was imperative to open China's education to the world widely and actively, and to pioneer access to the international educational market by measures such as attracting more foreign students to come to China and exerting Chinese traditional cultural influences abroad after China became a member country of the World Trade Organization (Z. Chen, 2002).

The Department for International Cooperation and Exchanges, Ministry of Education was founded in 1995 with the responsibilities of formulating guidelines and polices for international cooperation with foreign higher education institutions and organizations, drafting relevant laws and regulations, coordinating and supervising educational cooperation and exchanges, and of formulating polices for Chinese students studying abroad and international students studying in China. The establishment of this department in the Chinese Ministry of Education is an obvious indication that China is preparing to actively participate in the global trend of international cooperation, especially in the field of higher education.

Based on a review of the national policies formulated for encouraging students/faculty member movement and for improving international cooperation in higher education, a number of general modes of "international academic collaboration" could be found. Several essential modes of "international academic collaboration" in the current Chinese context, which were established under the permission of Chinese central government and provincial governments, will also be introduced in the next part of this Chapter. This is not only to give an overview of the current status of "international academic collaboration" in China and its strong influences on the process of internationalization of Chinese higher education, but also to present the implementation of national policies in the process of international academic collaboration.

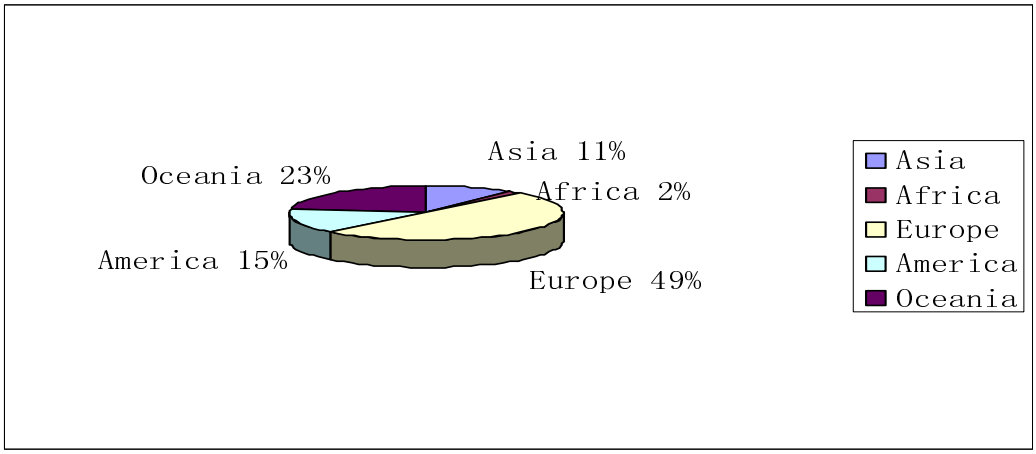
2.2 Essential modes of "international academic collaboration" in the current Chinese context

2.2.1 Student exchange programs

Sending Chinese students abroad and attracting foreign students studying in China have been taking an important role in the development history of Chinese higher education. This is a very basic but essential mode of "international academic collaboration" in the Chinese higher education system from 1980s until present. Higher education institutions in China are actively organizing exchange programs with foreign universities with the aim of diversifying Chinese students' experiences in different countries and cultures, utilizing the higher education resources in foreign higher education institutions, and inviting more international students coming to China.

From 1978 to 2003, a total number of 700,200 Chinese students and scholars studied in 108 countries and regions all over the world through different kinds of exchange programs, covering almost all disciplines. For the geographic distribution of the overseas Chinese students, the statistics for destination in 2003 is as follows: 10.5% to Asia, 1.8% to Africa, 49.8% to Europe, 15.4% to North America and Latin America, and 22.5% to Oceania.

Figure 1: Geographical Distribution of Overseas Chinese Students and Scholars

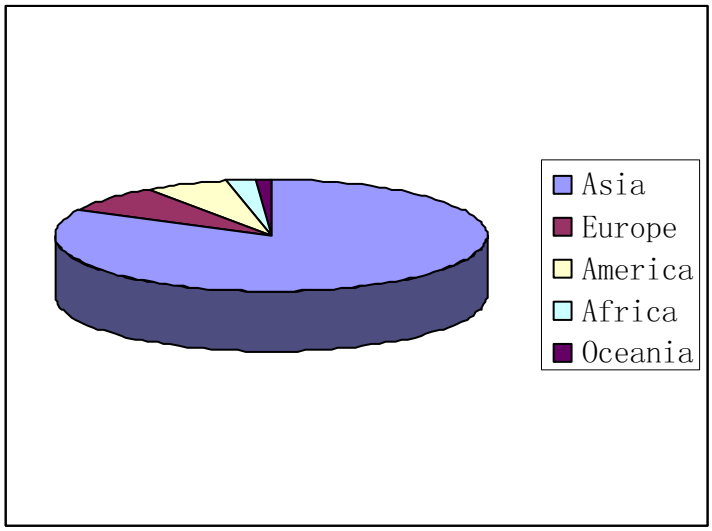


Source: MOE, China 2004

In the mean time, the number of international students coming from all around the world is continuously growing since 1978, the year that the "Reform and Open-up Policy" was adopted and implemented. From 1978 to 1999, the total number of international students studying in China reached 342,000 person-times. Since China has been successful in maintaining social and political stability and the rapid economic growth, this in return gives rise to the international students. In 1996, the total number of international students reached 41,000, an increase by 30 % over 1992. Furthermore, the enrollment of self-financed students through exchange programs made such a big stride that it has surpassed the number of students with scholarships, and became the main stream of the international students.

International students from Asia still top the list of all, totaled 63,672, accounting for 81.93%; While 6,462 students are from Europe, accounting for 8.31%; 4,703 from America, accounting for 6.05%; 1.793 from Africa, accounting for 2.31%, and 1085 from Oceania, accounting for 1.04%.

Figure 2: Geographical Distribution of International Students in China



Source: MOE, China 2004

According to the figures presented above, it is not difficult to understand why student exchange programs take such an essential and basic position in the international academic collaboration. Not only Chinese students abroad and international students in China are benefiting from these programs, Chinese higher education institutions are also gaining international reputation and widening the financial sources. Without doubt, this mode of international academic collaboration is accelerating the process of internationalization of Chinese higher education to a very large extent.

2.2.2 Faculty and staff mobility programs

Before 1978, the definition of faculty and staff mobility in the Chinese context is quite narrow. The aim of sending teachers or faculty members abroad is only for learning the teaching mode in other countries, especially in Soviet Union. This is because of the tight relationship between China and Soviet Union in history, and Chinese higher education was inevitably influenced by the Soviet mode. Marxism was the most important content for these teachers/faculty members to learn when they were sending abroad, and it was also becoming the paramount guideline for the development of Chinese higher education in the time of 1950s to 1970s. With the

adoption and implementation of “Reform and Open-up” policies in China, the aims of faculty and staff mobility are getting diversified. Teaching Chinese in foreign countries became the integral part of China’s policies in reform and opening-up to the world, and teachers who were sent abroad during this period (1978 up till now) assumed this responsibility, aimed to elevate China’s influence in the international community.

In the past 50 years, with the growing international status of China, more and more foreigners are becoming interested in the language of Chinese. Especially in the recent decade, Chinese teaching has been on a rapid rise in many countries and regions. In order to support Chinese teaching abroad, Chinese central government has sent teachers to more than 70 countries for 1,100 person-times from 1952 to 1999. More than 300 teachers have been sent abroad in different ways each year. In addition, the government also invites prestigious teachers of Chinese and foreign sinologists coming to China to have short-term academic exchanges, organizes professional training classes for teachers of Chinese abroad, and donates Chinese books and textbooks to foreign colleges. In 1988, the World Chinese Language Teaching Society was established with 258 members. The number of members has grown to 957 in 1999, among which 564 come from 41 foreign countries and regions. The Society has held 6 international symposiums on Chinese teaching, the first five of which were held in China, and the sixth was held in Germany in 1999, the first time ever in a foreign country. In 1993, under the support of the government of China, the Moscow Chinese Center, which was the first overseas Chinese center, was established. Up to 1999, there are totally 5 overseas Chinese centers in the world (MOE, 2005).

For the time being, faculty mobility is no longer limited in the field of teaching Chinese in foreign country. Joint research projects and joint publishing articles and papers are also important stimulus for Chinese faculty members being abroad, and for foreign scholars coming to China. This has become the most efficient and effective

mode of faculty and staff mobility since both sides of the research collaboration could utilize each other's academic resources and could strengthen the research competencies by combining the best academia from either country. The publishing of the articles or papers on the international government or conferences, in which Chinese scholars worked as the co-author, will also help enhance the reputation of Chinese academia and subsequently advance the international prestige of Chinese higher education institutions.

According to China's Daily (January, 2005), the most authoritative English version newspaper in mainland China, Chinese central government is starting to send 5.000 young university/college teachers abroad each year to study for doctor's degree or undertake academic research in top foreign universities. "This will be the largest in scale for the government to fund so many teachers to study abroad," said Zhou Ji, minister of education, at a ceremony on the project of sending outstanding young teachers to study abroad in Wuhan. The project, set up by the China Scholarship Council, plans to select academic leaders, promising scholars and outstanding young and middle-aged teachers to take further study abroad. About 50 universities participate in this program, among which 28 universities including the prestigious Peking University, Tsinghua University and Nankai University signed on the project as the first group. Either from the national level or from the institutional level, faculty/staff mobility programs are gaining the strongest support as one of the most important mode of international academic collaboration.

2.2.3 Joint and double degrees programs

Unlike higher education institutions in Europe, there were not so many joint or double degree programs before the higher education massification in China. Students would prefer to study in a Chinese university where the diploma was only issued by this university. Labor market in China also did not have the demand for students having joint/double degrees from foreign universities since the number of students enrolled

into universities each year was limited before Chinese higher education massification, and they were entitled as the group of "elite" meaning that they were very competitive in the Chinese society and labour market. Chinese central government did not issue any policies or regulations for permitting the foreign universities to establish joint/double degree programs with Chinese higher education institutions because there was not any demand either from students, higher education institutions or from the labour market. In 1997, the whole higher education system in China was beginning to undergo the process of massification. Demands for higher education from students and their families are far more beyond the capabilities and infrastructures of higher education institutions in China. And thus, Chinese government determined to welcome foreign universities coming to China by the mode of establishing joint/double degree programs, which aimed to satisfy the huge demands for higher education from the whole Chinese society.

In 2005, the American Association of State Colleges and Universities (AASCU) and the China Center for International Education Exchange (CCIEE) established the Sino-American 1-2-1 joint degree program. Chinese students will complete their freshman year at a Chinese university, take their sophomore and junior year at a U.S. university, and finish with their senior year at the Chinese university. Chinese students will award bachelor's degree from both the AASCU partner university in the United States and the Chinese partner university. Since CCIEE is affiliated with MOE China with the main duties to meet the needs of Chinese students for high quality educational opportunities and the needs of China for a well-educated work force, this agreement virtually indicated the positive attitude of Chinese central government towards improving international academic collaboration through the mode of establishing joint and double degree programs with Chinese higher education institutions.

2.2.4 Chinese-Foreign cooperation in running schools, branch colleges of foreign universities in China and branch colleges of Chinese universities abroad

With the adaptation and implementation of the "Regulations of People's Republic of China on Chinese-Foreign Cooperation in Running Schools" on March 1, 2003, for the first time China opened the door to welcome foreign educational resources coming to China that aimed to provide education services mainly to Chinese citizens. On the one hand this is a supplementary provision of education services to satisfy the increasing demands from Chinese students; on the other hand this is also a realization of promises that Chinese central government made when China was entering the World Trade Organization and later participating the GATS negotiation. In fact, cooperation in running higher education institutions is the core issue of this regulation. Foreign higher education institutions were authorized the competency to manage and administrate a higher education institution in China, and meanwhile they were also granted the right to establish a branch college in mainland China, although Chinese partner still takes the main responsibilities in the cooperation. Not surprisingly, Chinese central government and higher education institutions have decided to utilize the foreign educational resources, and meanwhile confront the challenges from these partners of foreign countries.

In the beginning phase of international cooperation in running schools or establishing branch colleges, introducing foreign educational resources to China was the main responsibilities of MOE and higher education institutions in China. However, with the cooperation with foreign partners, great efforts have also been made since the 1990s by some leading Chinese higher education institutions to export their education services abroad. At present, two types of institutions have come into being outside of China: those responsible for teaching Chinese language and those engaged in teaching Chinese medicine. In the former category, Chinese lectures usually move to a local partner in the foreign country based on a mutual agreement. After studying in their home country by using textbooks imported from China for six month or one year, the local students are expected to come to the partner institutions in China for further study before being awarded degrees or certificates by the Chinese institution. Such transnational education activities mostly take place in countries such as Japan, Korea

and other Southeast Asian countries, which used to be greatly influenced by Chinese culture. For example, Fudan University of China and Singapore National University have agreed to establish branch campuses in their respective universities and to undertake cooperation with each other in recruiting students and in mutually recognizing some curricula, credits, diplomas and degrees (see http://www.edu.cn). In the second category, concerning Chinese medicine, curricula and teaching are delivered in the local students' own countries by Chinese professors sent from China with the help of their local partners. When local students have completed their studies, a Chinese certificate or even a degree can be conferred. Geographically, unlike the Chinese language institutions, Chinese medical institutions are not only established in Asia but also, can be found in some western countries such as Germany, the United Kingdom, and Spain (Fuzeng et al., 2001).

What is more attracting is that Beijing Geely Univerisy, a private Chinese university founded in 2001, established its first branch campus in Denmark (China Daily, 2003). This is the first time in Chinese higher education history that private universities are granted the authority to open a branch campus in foreign countries. It indicated that not only public universities are competing in the higher education market with foreign universities; private higher education institutions in China are also being involved in drastic competition of taking the global higher education market at the same time. This is what WTO brings to China, and what China is doing for confronting the opportunities and challenges in the process of globalization.

2.2.5 International academic conferences/Scholarly forums

Attending the international conferences in foreign countries or inviting foreign scholars attending the academic conferences held in China is also an important mode of international academic collaboration in the Chinese context. Scholars coming from the world will have a platform for communicating academic interests, discussing research problems and presenting research products to the world. Chinese central

government has given strong support for advancing the development of this mode of international academic collaboration in China since academia in China will have the opportunity to present their research capabilities and research products to the foreign countries and meanwhile, this is also a precious chance of learning advanced technologies in foreign countries. Higher education institutions are also seeking opportunities to hold different kinds of international academic conferences or forums, which aimed to enhance the international reputation and thus to attract more international students coming to study in China.

In 2002, Conference of Chinese-Foreign University Presidents Forum was held under the general theme: building leadership capacity, envisioning university future. The conference was originally initiated by the Chair-holder, and later organized by the State Department of Education, Peking University and Tsinghua University. The purpose of the conference was to exchange views and to look for better ways or approaches for university governance, quality control and university management. Around 100 university presidents from North America, Europe and East Asia participated in the two weeks conference. During the conference it was identified that the universities all over the world share the common origins of human civilization and are deeply rooted in the social, historical and cultural soil of their own countries. It is therefore of special significance for Chinese and foreign university presidents to exchange views and discuss those issues at the conference.

The establishment of China International Conference Center for Science and Technology (CICCST, see http://www.ciccst.org.cn/) was seem as a big step for Chinese central government of supporting this mode of international academic collaboration. This is a not-for-profit national organization established under the leadership of China Association of Science and Technology with the objectives of promoting, by organizing professional conferences and technical forums, scientific and technological exchanges between Chinese and foreign professionals and scholars in the fields of science, technology, medical science, agricultural science and

engineering. International conferences and forums organized recently by CICCST include 2006 China-US Education Leadership Conference, Western Pacific Geophysics meeting, Asian-Pacific Association of Critical Care Medicine, and the 7th international symposium on Environmental Geochemistry, etc.

Although there are still other forms of international academic collaboration in current China such as cross-cultural training, area and theme centers, and student club and associations, they are not taking the most important positions in the international academic collaboration. The five modes presented above have been proved by the statistics and the reality of current Chinese higher education system that they are the most effective and efficient ways of cooperating with foreign higher education institutions in any kind of academic field. Unsurprisingly, the process for Chinese higher education towards internationalization is being accelerated by different modes of international academic collaboration. For Chinese higher education institutions, the continuous upgrading of international reputation and the enhancement of academic competitiveness in the global higher education market has brought academic/economic benefits not only to students, but also to the institutions themselves. In the next chapter, case studies in three Chinese higher education institutions will provide the empirical data, which will be used to further testify the relationship between different modes of international academic collaboration and the process of Chinese higher education internationalization.

Chapter 3: Case Studies in Three Higher Education Institutions in China: Peking University, University of Science and Technology of China, and Xiamen University

Based on the theoretical rationales presented in Chapter 1, case studies will be done in three universities in mainland China aimed to give an empirical analysis that could practically validate the hypothesis we made in the introduction part. These three universities are chosen because of their locations in different parts of China and thus their representations of different phase or level of higher education internationalization in China. I want to thank all my colleagues and friends now working or studying in these universities. It was a mission impossible without their willingness to share their precious time and insights, and without their helps on releasing related information to me. I do appreciate all you have done for me and my research.

3.1 Case institution 1: Peking University

Founded in 1898, Peking University was originally named as the Imperial University of Peking. It was the first national comprehensive university in China, as well as the supreme administrative organ for education in China at that time. The establishment of this university marked the beginning of China's modern history of education. It was in 1912, after the revolution of 1911 that the university came to adopt its present name.

The university consists of 30 colleges and 12 departments, with 93 specialties for undergraduate students, 199 specialties for master candidates and 173 specialties for doctoral candidates. While still laying stress on basic sciences, the university has paid special attention to the development of applied sciences. At present, Peking

University has 216 research institute and research centers, and there are 2 national engineering research centers, 81 key national disciplines, 12 national key laboratories.

At the end of last century, Peking University was placed, by the Chinese government, on the top of the agenda for promoting higher education, with a view to make it a world-class university in the 21 century.

3.1.1 Institutional policies for internationalization

In the case of Peking University, the internationalization process took place along with the implementation of the new national policies of economic reform and opening up to the outside world since the late 1970s. So sending students out and inviting scholars in was an approach first explored, but now, many new strategies are adopted. Totally around 250 institutional agreements with foreign universities have been signed, many joint research projects have been carried out, different students exchange programs are established to train future leaders by addressing problems related to environment, human rights and food shortage, and to increase students' multi-cultural consciousness. This indicates that leaders in Peking University have adopted a set of strategies and approaches in the process of internationalization to meet university's mission and goals.

The Office of International Relations (OIR) oversees the planning of Peking University's international relations by attending to a broad range of responsibilities. It executes the university's policies regarding external affairs and the coordination of international academic exchange. Together with the university president, OIR drafts new policies concerning international relations and thus plans the development of projects involving international affairs in the university.

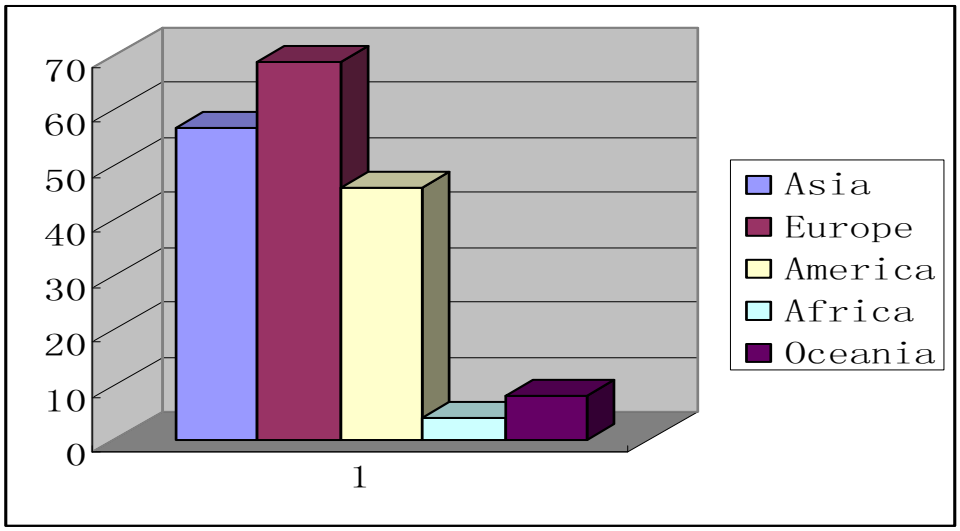
This office is also responsible for handling the external affairs of departments throughout Peking University. It facilitates teaching, scientific research and general

academic exchange by providing informational services. It invites foreign experts to the university, participates in international students' recruitment, and receives foreign scholars and visiting professors to the university.

3.1.2 The implementation of international academic collaboration

Peking University has always been putting great emphasis on international communication and cooperation. Up to date, different modes of international academic collaboration have been established with 200 universities and research institutes from 49 countries/regions all across the world: 57 from Asia, 69 from Europe, 46 from America, 4 from Africa and 8 from Oceania. Shown below is figure 3 indicating the geographical distribution of foreign higher education institutions that have academic collaboration programs with Peking University:

Figure 3: Geographical Distribution of Foreign HE Institutions That Have Academic Collaboration Programs With Peking University



Source: The Office of International Relations, Peking University, 2006

Peking University is also actively participating in different kinds of international conferences, and the number of students and faculty members that are sent abroad every year has already exceeded 5,000. On April 7th 2006, "international conference on strategies of international communication and cooperation" will be held in Peking

University. Leaders from different foreign countries will meet together to discuss the new strategies for improving international communication and cooperation, and the strategies will become the theoretical and practical rationales for the future development of Peking University.

Meanwhile, inviting foreign teachers coming to Peking University is also an important strategy for this institute's internationalization. Up till now, Peking University has been inviting foreign experts and teachers to teach and give lectures at the university for more than 100 years, revealing that Peking University's education is up to date, open and international. This tradition also reflects Peking University's emphasis on absorbing the essence of foreign culture, using the foreign experiences as a reference, and being in line with international academe. In recent years, the number of foreign teachers invited to Peking University can amount to 600 annually, coming from over 20 different countries and working in almost every school and department in the university.

According to the statistics, for the current time there are totally 1705 international students, including 1292 degree students and 413 non-degree students, studying in the fields of Humanities, Social Sciences, Natural Sciences, Information and Engineering Sciences, and Medicine in Peking University, and this number is continuously increasing during the last few years. More and more international students choose to study in Peking University not only because of the university's location in the capital and the relatively low living expenses in Beijing, but also because of the enhancement of the international prestige of Peking University and the competitiveness of Chinese academia among the global higher education institutions. Although Peking University has not taken a position in the top 50 universities in the world up till now, with the strong support from the Chinese government and the never ending international academic collaboration with foreign countries and higher education institutions, Peking University will determinately get even more internationalized and will become

one of the “world-class” universities in the world, as the target they made for the future.

3.2 Case institution 2: University of Science and Technology of China (USTC)

The University of Science and Technology of China is a new type of university established by the Chinese Academy of Sciences (CAS) after the founding of the New China. The establishment of the university is aimed at fostering high-level personnel of science of technology absolutely necessary for the development of the national economy, national defense construction, and education in science and technology. Differentiating from Peking University which mainly focused on social sciences, USTC put academic emphasis on forefront of natural sciences and high and new technology. And the activities of teaching and research in USTC are not only for educating young people, but also for some important political purposes meaning that some of the subjects in this university like safety engineering and technology only accept students from China. However, this did not become an impediment of the internationalization process of this university.

USTC has taken a leading position among Chinese universities on the number of research papers published internationally and in the citation rate of the papers. Since 1996, USTC consistently ranks No. 4 on the number of papers included by SCI; Since 1999, the University ranks No. 1 on the number of papers published in the journals with high-impact factor among universities across China. Between 1991 and 2000, USTC ranks No. 1 among Chinese universities on the number of papers published in the internationally distinguished journals of "Science", "Nature", "PRL", and "Jacs". USTC ranks No. 2 among the universities and research institutions in the world on the number of nano-research papers published from 1996 to 2000.

Considering the leading role of USTC in Chinese higher education, governments at all levels have been giving great priorities to this institution when they are formulating

policies concerning financial issues. In 1995, USTC was approved by the central government as one of the first batch of universities obtaining the support of construction in the National 9th Five-Year Plan and the "Project "211". And in 1999, USTC was singled out as one of the nine universities enjoying priority support from the nation's "Plan of Vitalizing Education Action Geared to the 21st Century", obtaining unified support and guidance from the CAS, the Ministry of Education, and the Anhui Provincial Government.

3.2.1 Institutional policies for internationalization

Improving and strengthening the international academic collaboration with foreign higher education institutions have always been the most essential strategies for the internationalization of USTC. The establishment of international affairs office was an indication for the university's intention of being an internationalized institution through different modes of international academic collaboration, such as signing cooperation agreements, sending students and teaching staff abroad, inviting foreign teachers giving lectures in USTC, and jointly doing research in the fore-front scientific and technological topics. Almost every year from 1980 to 2002, there was at least one foreign higher education institution becoming the "Sister Universities and Institutions" of USTC. Academic collaboration with these foreign universities became even more frequent and tight. According to the statistics provided by the international affairs office of USTC, up till now the university has signed agreements of cooperation and exchange with around 100 universities and research institutions in more than 30 nations and regions. Around 300 international experts and scholars visit USTC every year for lecturing and collaborative research. USTC has sent around 10,000 individual visits to more than 30 nations and regions for study and cooperative research.

For internationalizing USTC by different modes of international academic collaboration, students and teaching staff will have the opportunities to communicate

with excellent academia in foreign countries, and thus to have the multi-cultural experiences and to be internationally skilled. By inviting foreign teachers and professors coming to China, USTC will learn from their advanced academic competencies and meanwhile making this institution more diversified. Currently there are 37 International Honorary Professors in USTC, and they will visit and give lectures to the students in a regular base. (Details about the names of "Sister Universities and Institutions" of USTC will be presented in the appendix 1 and list of International Honorary Professors will be given in the next part.)

Because of the special responsibilities of USTC to Chinese central government and some extreme restrictions on certain forefront subjects, attracting international students have not become the main strategy for the internationalization of USTC. As a result, there are only 27 international students now studying in the subject of Chinese Language or Chinese Literature. Since Chinese central government has been giving full financial support to this university, finding other financial sources through enrolling international students seems not to be the main concern for USTC, at least for the time being.

3.2.2 The implementation of international academic collaboration in USTC

In this part, some data will be given out in order to illustrate the extent of international academic collaboration in USTC, and its impact on the internationalization of this institution. Appendix 1 is an explanation of the "Sister Universities and Institutions" in which the exchange programs were strongly supported and thus the mobility of students and teaching staff was enhanced to the largest extent. (Please see appendix 1)

According to the number of "Sister Universities and Institutions" shown in Appendix 1, we can find out that USTC has the most extensive international academic collaboration with higher education institutions in USA, and Japan secondly. Students and teaching staff are sent out to these countries every year aimed to make them

multi-experienced and meanwhile to present the academic standards of USTC to the worldwide. Foreign teachers and professors are also invited to USTC every year to strengthen the academic communication with those famous scholars in foreign countries. The list shown below is an illustration of the "International Honorary Professors" who are visiting and giving lectures in USTC for the time being.

List 1: International Honorary Professors of USTC

G. Andreotti	Former Prime Minister of Italian Government, Italy
A. Arima	University of Tokyo, Japan
S. S. Chern	University of California, USA
C. W. Chu	University of Houston, USA
E.D. Courant	Brookhaven National Laboratory, USA
H. Hofer	Swiss Federal Institute of Technology, Switzerland
W. C. Hsiang	Princeton University, USA
A. Salam	Former President of the Third World Academy of Sciences
D. Hubel	Harvard University, School of Medicine, USA
C. K. Jen	Johns Hopkings University, USA
J. Klauder	University of Florida, USA
T. D. Lee	Columbia University, USA
Y. T. Lee	Taiwan Central Research Academy
S. Okinaga	Teikyo University, Japan
T. Pian	Massachusetts Institute of Technology, USA
K. Sigbahn	Uppsala University, Sweden
D. B. Spalding	Imperial College of Science, UK
C. L. Tian	University of California, USA
S. C. C. Ting	CERN, Massachusetts Institute of Technology, USA

Y. C. Whang	Catholic University of America, USA
T. Wiesel	Rockefeller University, USA
A. Wolfendale	University of Durham, UK
C. S. Wu	Columbia University, USA
C. L. Wuan	Columbia University, USA
X. X. Xiu	Purdue University, USA
C. N. Yang	State University of New York at Stony Brook, USA
Satoshi Lue	Chairman and Chief Executive Officer, Sanyo Electric Co. Ltd., Japan
Y. L. Liew	Hong Kong Yilida Industrial Cooperation Ltd.
Ed Rowe	University of Wisconsin, USA
J. M. Lehn	Laboratoire de Chimie Supramocularire, University Louis Pasteur
A. Zeilinger	University of Vienna
Shing-Tung Yau	Harvard University, USA
R. Breslow	Columbia University, USA
R. F. Curl	Rice University, USA
Charles M. Lieber	Harvard University, USA
Eugene Garfield	"The Scientist", USA
Shlomo Havlin	Bar-Ilan University, Israel

From the list we can find that scholars from foreign countries are those who have high reputation in the academia and they are all working in the top universities or organizations in the world. Unsurprisingly, the collaboration of these famous scholars with USTC has enhanced this university not only from the aspect of academic competitiveness, but also from the international prestige. This resulted in the fact that Graduates from USTC are very competitive in the labor market. However, most of the

graduates choose to continue their study abroad although they could find a job in China easily.

A very interesting phenomenon in USTC is that undergraduate students are very competitive for applying graduate study in US. Every year, hundreds of offers of admissions from top 10 universities in America are sent to the undergraduate students in USTC. It seems that diplomas for undergraduates virtually act as "visa" to US, and even to many famous universities in Europe. On the one hand, this is signal of the enhancement of academic prestige of USTC in the world; while on the other hand, this has resulted a very serious problem for the Chinese central government that most students would prefer to stay in US because governments and higher education institutions in America could provide superior living conditions and even more funds for their academic research. How to attract these "elite" to come back to China has become the main concern of Chinese central government. This issue will be further discussed in the next chapter.

3.3 Case institution 3: Xiamen Univeristy

Xiamen University was founded in 1921 by Tan Kah Kee, the well-known patriotic overseas Chinese leader. It was the first university in China founded by an overseas Chinese. It is located in Xiamen, Fujian Province, a scenic port-city on the southeast coast of China, directly facing Taiwan Island with the Taiwan Strait in between. At present, it is the only key comprehensive university directly affiliated with the Ministry of Education in the five special economic zones and is one of China's higher-level universities designated for the state key construction of the "211 Project". (100 universities in China affiliated with the Ministry of Education have been carefully selected and will be given priority both from finance and policies for their development in the 21st century).

Xiamen University has over 4,900 staff, including 2,061 full-time faculty and professional researchers. 17 of the faculty staff are academicians of Chinese Academy of Sciences (CAS) and Chinese Academy of Engineering (CAE). Moreover, 7 faculty members of Xiamen University are taking positions in the State Council's Academic Degree Appraisal Committee. Among the full-time teachers and researchers, there are 1,252 professors and associate professors, including 337 doctoral supervisors, accounting for 60.4% of the total; 820 holding a Ph.D degree, accounting for 41.7 of the total; and 786 returned scholars from overseas, accounting for 38.1% of the total.

The university now has a total enrollment of over 31,000 full-time students on campus, including 18,989 undergraduates, 10,591 master students, 1,810 doctoral students and over 1,200 international students. 80 research institutions have been set up in Xiamen University, including 2 State Key Laboratories, 3 Key Laboratories of the Ministry of Education, 1 Fujian Provincial Engineering Research Centre, 1 Fujian Provincial Research Center, and 5 state key research bases in humanities and social science. Two research reports were published in the international Science Magazine in 2004.

Xiamen University has also established inter-university cooperative ties with 89 institutions of higher education outside mainland China. By establishing academic ties with 24 universities and colleges, 63 research institutes and 34 media outlets in Taiwan, Xiamen University has become one of the universities in mainland China that most actively engaged in educational, scientific, and cultural exchanges with Taiwan.

3.3.1 Institutional policies and the implementation of international academic collaboration in Xiamen University

Xiamen University is the earliest university in China developing international academic collaboration. Starting from the overseas correspondence education in the 1950s and the education for overseas students coming to China in the beginning of

1980s, the university has fostered over 30 thousand overseas students of various kinds from more than 90 countries.

This university also maintained a global perspective on higher education and has promoted international academic collaboration in numerous fields. It has inter-university collaboration relations with over 80 higher education institutions in such countries and regions as US, Canada, Australia, New Zealand, Japan, United Kingdom, the Netherlands, Italy, France, Korea, Hong Kong, Macao and Taiwan. It deserves to be mentioned that Xiamen University has formally established multi-lateral collaboration with Inha University in South Korea, Le Havre University in France, University of Rhode Island and the University of Washington in America, RMIT (Royal Melbourne Institute of Technology) university in Australia, and Haifa University in Israel by signing the Agreement on Global U7 Consortium in April, 2004. (See appendix 2 for the sister universities of Xiamen University)

Every year the university sends out some hundred scholars, teachers and students abroad to develop international research projects, continue their further study or take part in academic conferences. And since the 1980s, the university has invited more than 3000 foreign experts to teach, give lectures or make research.

The Office of International Cooperation and Exchange was established to foster the academic collaboration and exchange with other foreign universities around the world. Its missions include promoting international exchange, maintaining and strengthening cooperative relationships with sister universities and institutions (see appendix 2), as well as providing counseling, coordination and services for foreign experts and international visitors at Xiamen University.

Joint degree programs are being explored by Xiamen University with a number of foreign universities, such as Curtin Technology University of Australia, Oxford Brooks University in UK, Sussex University in UK, Saint Mary's University in

Canada, Newcastle University upon Tyon and so on. For the time being Xiamen University is running a joint degree program with the University of San Francisco in the area of environmental science, which has proven to be very popular among students. In addition, Xiamen University has just signed an agreement with the University of Luton of UK and will run a joint degree program in media arts through a 2+1+1 model. Students involved in this program are supposed to finish first two years study at Xiamen University and then move to Luton for one year. Upon completing all required credits of both universities, students will be conferred two bachelor degrees from both Xiamen University and the University of Luton. Afterwards, students can choose to stay one more year in Luton for their master's degree study in media art if they like.

The Overseas Education College of Xiamen University was founded in 1956 as an institution for higher learning for international students. This college is entrusted with the tasks of admission and administration of all the international students in a variety of disciplines at the university. Besides that, it independently offers the specialties of Chinese Language and Literature, Chinese as a Foreign Language, and traditional Chinese Medical Science. This college also established both long-term and short-term non- degree training programs offering various kinds of training courses for overseas teachers of Chinese language and culture, and organized summer schools for overseas young students of Chinese origin.

At present, there are 60 teaching staff and 25 invited foreign professors or associate professors working in the Overseas Education College. Since the establishment of this college, it has enrolled approximately 30,000 overseas correspondence students and over 3,000 international students from more than 60 countries and regions. Therefore, the Overseas Education College has been praised for "imparting knowledge all over the world and thus gaining a good reputation throughout the five continents".

“Pursue the excellence, Strive for perfection”, the motto of Xiamen Univeristy, is being fulfilled by different modes of international academic collaboration. With its advantages of the location in southern coast of China, this university is opening its door to welcome students, professors and all kinds of international research projects from all over the world. Through international academic collaboration, Xiamen University has not only become a prestigious university in China, but also become an efficient and reputable university in the global higher education market. The coming of more than 3000 international students has given the university a very important source of financing for its further development and construction. A conclusion can be reached is that Xiamen University is accelerating paces for international academic collaboration, aimed to be truly involved in the process of higher education internationalization in China.

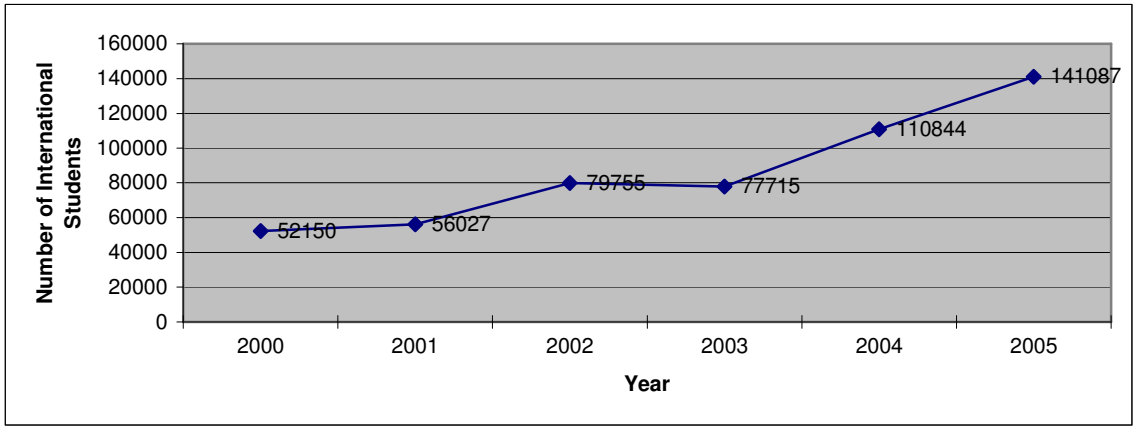
Case studies in these three universities have provided us the empirical data of impacts of international academic collaboration on the process of Chinese higher education internationalization. These data show that different modes of international academic collaboration are being developed by higher education institutions, and this is because universities in China have obtained the benefits that were brought by the collaboration. Not only in the Capital Beijing, the big city Hefei in the middle part of China or the coastal city Xiamen, higher education institutions in every parts of China are actively participating and taking advantages of different modes of international academic collaboration.

3.4 Conclusions

According to the statistics of MOE, the number of international students coming to China via different modes of international academic collaboration is 52,150 in the year of 2000; in 2002 the number reached to 79,755. The outbreak of SARS in 2003 had brought great difficulties for the enrollment of international students, and the number of the students was basically stabilized. Totally in 2003, 777,15 international

students of different types from 175 countries were accepted by 353 Chinese higher education institutions. However, the number keeps increasing in the year of 2004 and 2005. There are respectively 110,800 and 141,087 international students choosing to study in China. This is most remarkable increase in the number of international students during the last ten years.

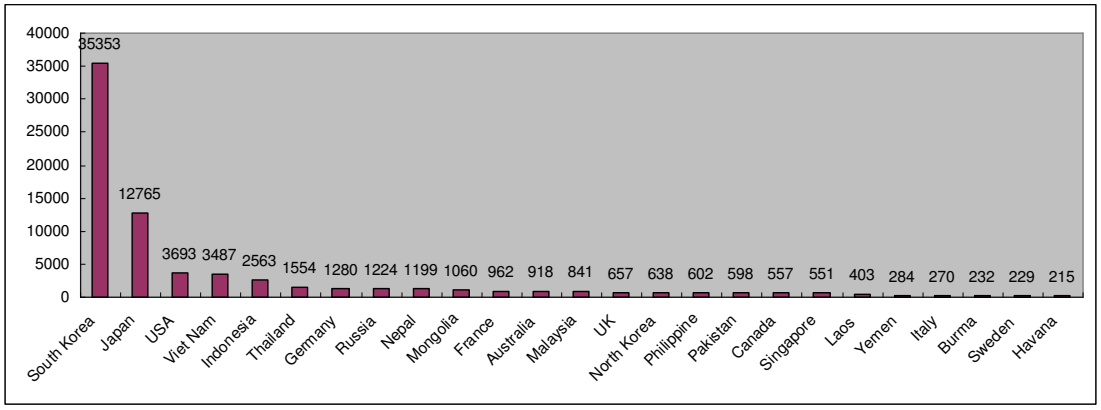
Figure 4: Number of International Students in China from the Year of 2000 to 2005



Source: Ministry of Education, China Education Year Book (2005)

For the time being, we can not find the detailed information about the countries that these international students come from in the year of 2004, but there is a precise and integral data concerning the year of 2003 that could help us understand the original countries of those international students in China. Countries that have more than 200 students studying in China (2003) are: South Korea 35,353, Japan 12,765, USA 3,693, Viet Nam 3,487, Indonesia 2,563, Thailand 1,554, Germany 1,280, Russia 1,224, Nepal 1,199, Mongolia 1,060, France 962, Australia 918, Malaysia 841, United Kingdom 657, North Korea 638, Philippine 602, Pakistan 598, Canada 557, Singapore 551, Laos 403, Yemen 284, Italy 270, Burma 232, Sweden 229, and Havana 215.

Figure 5: Countries That Have More Than 200 Students Studying in China (2003)



Source: Ministry of Education, China Education Year Book (2004)

South Korea, Japan, USA, Viet Nam and Indonesia are the top five countries that have the largest number of international students in China. On the one hand this is because of the cultural consistency among Asian countries; on the other hand, it is a result of the extensive international academic collaboration between Chinese higher education institutions and those in America. The sister universities of USTC that presented in 3.2.2 is a good explanation.

Both from the theoretical rationales discussed in Chapter 1 and the empirical data presented in this chapter, a conclusion can be reached is that Chinese higher education is becoming more and more internationalized through different modes of international academic collaboration. Higher education institutions in China are gaining international reputation which has become the main reason for the continuously increasing of international students studying or will study in China. This has made Chinese higher education an equal member, but not a victim of the drastic competition in the global higher education market. Challenges and opportunities are coming to the Chinese higher education system during the collaboration and the process of internationalization, while all these will become the driving forces for the wider openness of China and Chinese higher education in the future.

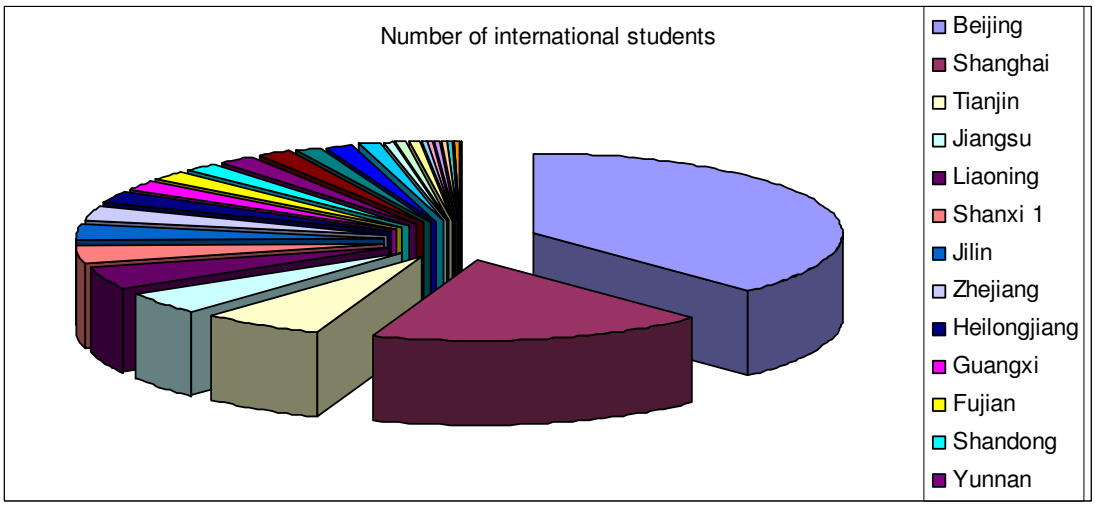
Chapter 4: Problems Emerged During International Academic Collaboration and the Correspondent Strategies of Chinese Central Government

Although various modes of international academic collaboration are being extensively implemented in different parts of mainland China, the emergence of problems concerning the collaboration has never ended. Many issued need us to pay attention to, and meanwhile find out the policy alternatives to effectively and efficiently solve these problems. In this chapter, focuses will be put on the issues such as the unequal development of international academic collaboration in China, and subsequently the imbalance of internationalization of Chinese higher education; the tough problem of "brain drain", which deemed as an unexpected result of international academic collaboration for Chinese central government.

4.1 The imbalanced development of international academic collaboration in mainland China

According to the statistics of MOE (2004), the geographical distribution of international students in China presented an imbalanced tendency. Here is a precise and integral calculation: Totally 777,15 international students were enrolled through various modes of academic collaboration in the year of 2003: Beijing 29,332, Shanghai 13,858, Tianjin 4,952, Jiangsu 3,684, Liaoning 3,434, **Shanxi (1)** 2,836, Jilin 2,537, Zhejiang 2,089, Heilongjiang 1,941, Guangxi 1,686, Fujian 1,533, Shandong 1,451, Yunnan 1,451, Hubei 1,220, Sichuan 1,097, Guangdong 1,071, Henan 907, Hebei 487, Anhui 383, Xinjiang 371, Hunan 302, Neimenggu 274, Chongqing 159, Jiangxi 144, Qinghai 125, Gansu 116, **Shanxi (2)** 69, Hainan 67, Guizhou 65, Xizang 48, Ningxia 26.

Figure 6: Geographical Distribution of International Students in Different Provinces and Regions, China (2003)



Source: Ministry of Education, China Education Year Book 2004

Note: Shanxi (1) is 陕西 province, while shanxi (2) is 山西 province in China. Although the pronunciation and spelling in English are same, the characters in Chinese are different.

International students are mainly centralized in big cities and provinces along the southeast coast of China. This is partly because of the location and the gentle climate, but the main reason is the high-level economic development in these areas. As a matter of fact, gaps between southeastern and western China are enlarging not only in the domain of economy, but also in the area of education, especially higher education. In 1949 when China was founded, there were totally 205 higher education institutions, and 55 institutions were in western China that accounted for 25.4% of the total number. However, in 1997 there were totally 1,022 higher education institutions in mainland China, and 205 institutions in western China which only accounted for 20% (China Education and Research Network, 2003). Although the number of higher education institutions in the western China is increasing during the last 48 years, the ratio of the number in western China and the total number in mainland China is not increasing but decreasing.

Concerning the capital asset, in 1997 the average level of capital asset per student in Chinese higher education institutions is 26,444 RMB (divided by 8, almost 3,305 US dollars), and all the institutions in eastern, southern and middle of China are over this level. While for the universities in the western China, none of them reached this level. If we make a comparison with the universities in Beijing, we will find that in Guizhou Province the average level is 15,915 RMB, Xinjiang is 17,234 RMB, Ningxia 17,906 RMB, Qinghai is 18,861 RMB, which respectively accounted for 33%, 36%, 37% and 39% comparing with the number 48,230 RMB of the universities in Beijing (China Education and Research Network, 2000).

Table 1 is an illustration of the basic situation of higher education institutions in mainland China and some parts of China. We can make a comparison here and we can find out the gap between the universities in eastern, middle of China and universities in the western China.

Table 1: Basic Data of Higher Education Institutions in Different Parts of China, 1998

Area	No.of HEI	No .of Students admitted per year	No. of Students studying in HEI	No. of HEI directly affiliated to MOE	No.of HEI belonged to "211 Project"
Mainland China	1022	1,083,627	3,408,764	44	103
Eastern China	482	547,434	1,721,864	28	58
Middle China	338	344,670	1,073,826	10	28
Western China	205	191,523	613,074	6	17

Source: Wang, Genshun & Li, Jing, Education Research 2001

Note: HEI means Higher Education Institutions

No matter from the infrastructures or from the investment of Chinese central government, higher education institutions in western China have been left behind by those in southeast and middle of China. This is the main reason for international students choose to study and live in big cities of southeastern China. There they could have better higher education resources including the infrastructure and teaching staff,

and they will also have more opportunities for finding a job in China after graduation. International students and their families would like to spend money in the universities in south and east China, making the financial sources of those in western China become even scarcer.

4.1.1 Policies concerning "The West Development"

It seems to be a vicious circle for the development of universities in west China. Policies concerning this issue have been designed and implemented that aimed to accelerate the economic and educational development in this part of mainland China. At the turn of the century, the Chinese government launched the West China Development Program, aiming to reorient the growth vigor towards the western region. And a series of fiscal initiatives and institutional innovations have been proposed and implemented to boost the region's development prospects and close the income gaps between the western inland provinces and the rest of China. In the first three years of this program, 36 mega infrastructure projects with investment over 600 billion RMB (equivalent to 72 billion US dollars) have taken off. China's banking sector has increase another 600 billion RMB of loans to the provinces in the western region. To Chinese policy makers, the development of the west region is meant to reduce interregional disparities and thus to find a balance of economic development in the whole mainland China.

Concerning the education especially the higher education development in the western China, on September 23rd, 2004 the Ministry of Education and the West Development Office of State Department jointly issued "the Planning of 2004-2010 Education Development in West China", in which purposes and strategies for developing education in west China were laid out. Policies concerning the development of higher education sector include: re-regulating the overall management and structures of higher education institutions in the western region; diversifying the financial sources of higher education institutions; enlarging the scale of higher education especially the

scale of vocational education; establishing mechanisms to attract excellent students working and living in the provinces of west China; giving higher education institutions more quota in the “211 Project” which means to give more priorities in developing and helping enhance the reputations of the universities in the west; increasing the investment to establish international academic research labs or research centers in the west region and strengthening the academic collaboration with universities in the southern, eastern and middle parts of China, even with higher education institutions abroad.

And to cope with the "West Development" campaign, works related to students and scholars studying abroad have also come up with new ideas, that is, to establish cooperating mechanism with the western regions. The Ministry of Education plans to bring more bilateral or multilateral investment and cooperative projects to the West, to bring more state-funded programs for studying abroad to the West and to bring more returnees to the west.

There are also many programs designed by the MOE, aimed to use different modes of aids from universities in the south and the east to the universities in the west. In fact, aids from universities in the south and east China have always been an important source for the development of the western higher education institutions since 1950s. In early 2001, Xinan Jiaotong University helped Tibet University establish a college of engineering, and also helped to set up a post-graduate department in this university later this year. Meanwhile, six prestigious universities in Shanghai signed the contract with seven universities in southwest China’s Yunnan Province to set up laboratories and doctorate departments there and jointly launch scientific researches. And in June 2001, the Ministry of Education appointed Peking University to contract with Shihezi University in northwest China’s Xinjiang Uygur Autonomous Region in a bid for an all-round teaching aid program, including academic communication. Statistics show that until September 2005, universities in eastern and southern China have assigned

973 teaching staff and have donated 78.63 million RMB (equivalent to 9.47 million US dollars) to the west China. (China Daily, 2006)

Chinese central government is sparing no effort to accelerate the economic and educational development in the western part of China. Higher education institutions in this region are also actively seeking ways of surviving and thus competing with opponents not only from Chinese mainland but also from foreign countries. It is good to see that although the number of academic collaboration/cooperation programs in western universities is still far less than the number in the south and east, there is a tendency that universities in west region are currently endeavoring in catching up with universities in other parts of China and in internationalizing themselves in the global higher education market. With the strong support from Chinese governments at all levels and the great efforts that universities in the west China have been making, the gap between universities in the east and south, and those in the west will definitely be reduced to the largest extent.

4.2 "Brain Drain", the unexpected result of international academic collaboration

Benefits from different modes of international academic collaboration are distinct for Chinese students. It makes it possible for them to experience the foreign culture and to learn the advanced knowledge and skills that they cannot obtain in China. And in the joint-degree programs, they can obtain double degrees which are recognized both in China and abroad. Without doubt, this will enhance their competitiveness and attractiveness in the global labor market. However, there has always been a serious problem that cannot be overlooked by Chinese central government. Many Chinese students would prefer to work and live in the foreign countries where they obtained the multi-cultural experiences and even degrees. This is recognized by the Chinese central government as a diversion of human resources and a great loss for China's long-term development.

For many years after China started sending students and scholars through different modes of international academic collaboration to study abroad, Chinese central government was concerning about their low return rate to their native country. In the mid-1980s, an official Chinese delegation went to Washington to sign a joint statement with the U.S. Department of Education, reaffirming that state- or institution-sponsored students from China have "an obligation to return to their homeland." However, after the Tiananmen Square incident in 1989 and the resulting Chinese Students Protection Act issued by the U.S. government, approximately 50,000 Chinese students and scholars obtained permanent residency in the United States. Similarly, some 10,000 Chinese students and scholars in Canada and over 20,000 in Australia received permanent residency status, permitting them to stay and work in those countries. (Zweig, D 1997, 92-125)

According to official Chinese sources, between 1978 and 1995 a total of 130,000 Chinese students and scholars were sent to study in the United States, and among them some 20,000 (15.4%) returned (Wei, N.T. 2002, 314). Of approximately 20,000 students and scholars who studied in Canada during the same period, some 4,000 (20%) returned. The return rate of students who went to Australia was the lowest- only 2,500 (6.3%) out of 40,000 returned (Wei, N.T. 2002, 314). Understandably, self-sponsored students have a lower return rate than do state- or institution-sponsored students. Between 1978 and 1989, less than 1,000 (4.5%) out of 22,000 self-funded students who studies abroad returned to China.(Ibid., 438)

Despite concern about the so-called brain drain - the outflow of human capital to other countries – the Chinese government has not closed the door on international academic collaboration. There are several reasons for the Chinese leadership to continue its liberal policies regarding academic exchanges or collaboration with the outside world. Perhaps the most important is the fact that the Chinese government cannot afford to lose this important means of internationalizing Chinese higher education and catching up on scientific and technological advancements. For Deng, Xiaoping and other

Chinese leaders, the primary goal behind sending a large number of students and scholars to western countries was to "make up for the decades lost" during the Cultural Revolution, when China was almost completely cut off from the international academic community. (Li, C 2001, p4)

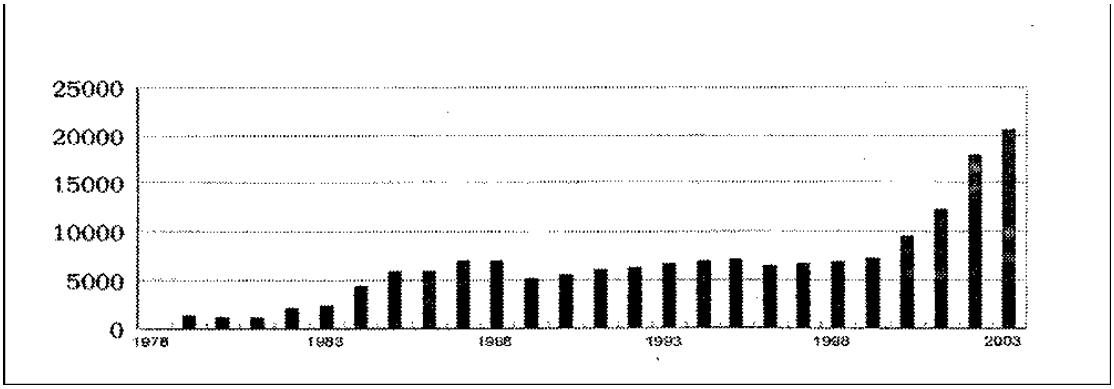
4.2.1 Incentives for returnee students and scholars, and policies concerning "brain gain"

Aiming to attract outstanding students and scholar abroad to return to China, governments at all levels, as well as enterprises and institutions, have all come up with supportive policies in this regard. Taking Chinese central government and MOE for example, they have been conducting some exemplary programs, such as "The fund for returnees to launch scientific and technological researches" and "The Chuihui (literally, spring bud) programs" to implement the policies for attracting students and scholars to return and to promote more flexibilities for the students and scholars studying overseas to serve the country, such as through academic exchanges, joint researches, talents training and so on. Funding for the returnees to do research and the payment to them in giving lectures in mainland higher education institutions have been given the priorities in the design of the financial plans by Chinese governments and higher education institutions.

Provincial governments are endeavoring to strengthen the development of "Enterprises Park" for those returned from overseas studies and establish fine marketing mechanism and comprehensive circumstances through the "Supporting Fund for Starting Enterprise for Outstanding Talents Who Return From Overseas Studies" and favorable policies concerning the procedures for starting an enterprise in China. In the mean time, governments at all levels have designed the policies in guaranteeing them (Chinese students and scholars studying or doing research abroad) the freedom of coming and going. This is virtually giving more flexibilities and

choices for those returnees to consider the country or place that they would like to work and stay.

Figure 7: Changes in the Annual Number of Chinese Students and Scholars Returning to China After Studying Abroad (1978-2003)



Source: People's Daily, March 2nd, 2004

The reasons behind the recent tidal wave of returnees are multiple and complex. China's robust economic growth, the improvement in its sociopolitical conditions, its growing integration into the world economy, various Chinese government policy initiatives, and the difficulty of finding jobs overseas are some factors contributing to this increase. Chinese higher education institutions are no longer "preparatory schools" for students who plan to study at universities abroad. After the return of many Chinese students and scholars, it appears that foreign universities are becoming the training ground for talented Chinese who will return to China to make their contributions to their homeland.

At the same time, Chinese central government and Chinese higher education institutions have never slowed down the steps of so called "brain gain" in China. By restructuring higher education in China and by providing English-taught courses, Chinese higher education institutions are also engaged passionately in attracting international students to study and work in China after graduation. Beijing University of Aeronautics and Astronautics is providing more than 45 English-taught programs to international students; and by establishing international cooperation programs,

universities like Peking University, Tsing Hua University and Zhejiang University are attracting more and more students to study in China. By the end of 2003, totally 77,715 students of different types from 175 countries were accepted by 353 higher education institutions in China (MOE, 2004). According to the statistics presented above, it is not difficult to find that with the fast economic development in China and the enhancement of international reputation of Chinese higher education institutions, more and more students would prefer to study and work in China, the place where they could obtain more opportunities for the future development of their careers.

On the 15th of August, 2004, "The ratification and regulation of foreigners permanently staying in China"- which is deemed as the "Green Card Policy in China", was issued by Chinese central government. Foreigners will take the same responsibilities and meanwhile have the same rights as Chinese citizens if they are highly professional persons that could make contributions to the economic and educational development in China. This means that on the one hand, Chinese government is making great efforts to prevent the trend of "brain drain" to foreign countries; on the other hand, attracting foreigner to study and work in China (brain gain) is also put on the agenda of Chinese central government. By implementing these policies, China hopes to gain the most professional and talented people, no matter Chinese or foreigners, to contribute their knowledge in accelerating the economic development and in making China competitive in the globalized and knowledge economy.

Conclusion

This paper examined the rationales for the internationalization of Chinese higher education, and the validity of international academic collaboration as an efficient and indispensable way in the process of Chinese higher education internationalization. Although in this process, challenges such as the uneven development of Chinese higher education in the western region and the problem of so called "brain drain" have never disappeared, Chinese central government and higher education institutions are still sticking to the target of "opening the door to the world, and building the world-class universities in the 21st century". It is not surprising that with the "open-up" attitudes held by the Chinese central government and the efficient implementation of policies concerning the higher education internationalization by more than one thousand higher education institutions in China, Chinese higher education is becoming an important member of the global community, the member that will continuously make contributions to the academic enhancement and economic development of the world.

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Appendix

Appendix 1. Sister Universities and Institutions of USTC from 1980 to 2002

Country/Region	Institution	Year
USA	College Park, University of Maryland	1980
USA	Wayne State University	1980
USA	Baltimore Campus, University of Maryland	1981
Japan	Faculty of Engineering, University of Tokyo	1982
USA	University of Alabama	1984
D.P.R.Korea	Korean University of Science	1984
France	Lyon China-France College	1986
USA	University of Notre Dame	1986
France	University of Paris-Sud	1987
U. K.	Imperial College of Science, Technology and Medicine	1988
Russia	Moscow State University	1989
Japan	Hitachi IGS Limited Company	1989
USA	College of Engineering, University of Illinois	1990
USA	School of Science, Purdue University	1990
Japan	University of Teikyo	1991
Taiwan	University of Danjiang	1991
Hong Kong	The Chinese University of Hong Kong	1992
Ukraine	Institute of Metal Physics of Ukranian	1992
Japan	University of Tokyo	1993
Korea	Pohang Institute Science and Technology	1993
Russia	Far East Branch of Russian Academy of Science	1993
Russia	Khabarovsk State University of Technology	1993
Austria	University of Vienna	1993
Hong Kong	City University of Hong Kong	1994
Italy	University of Padova	1994
Switzerland	Laboratory of High Energy Physics of EPHZ	1995
U. K.	University of Wales College of Cardiff	1995
Japan	University of Kyushu	1995
Korea	Korea Advanced Institute of Science and Technology	1995
USA	Saint Rose University	1995
Japan	Nippon Jigyo Tsushin Mo.	1996
USA	University of Texas at Austin	1996
Japan	University of Electro-Communications	1996

USA	Southern Illinois at Carbondale	1996
Israel	University of Balila	1996
Australia	Business School, University of Sydney	1996
Japan	Faculty of Engineering, University of Kyoto	1996
Hong Kong	University of Hong Kong	1996
Hong Kong	Chen Hsong Industrial Group	1996
Hong Kong	Hong Kong Polytechnic University	1996
Hong Kong	Hong Kong University of Science and Technology	1996
Singapore	Nanyang Technological University	1997
Germany	Karlsruhe University	1997
Japan	Tokyo Institute of Technology	1997
Russia	Moscow State University	1997
Russia	Saint-Petersburg Technical University	1997
Japan	Fuji Xerox Co. Ltd.	1997
Taiwan	Faculty of Science, Cheng Kung University	1998
Japan	University of Tokyo	1998
Japan	Tohoku University	1998
Singapore	Institute of High Performance Computing	1998
Japan	Waseda University	1999

USA	College Park, University of Maryland	2000
Australia	University of Melbourne	2000
New Zealand	University of Auckland	2000
USA	University of Wisconsin-Madison	2000
USA	Cornell University	2000
USA	Purdue University	2000
Poland	Institute of Nuclear Chemistry and Technology	2000
U.K.	The University of Nottingham	2001
Finland	Abo Akademi University	2001
Spain	University of Autonoma de Madird	2001
Japan	University of Electro-Communications	2001
Hong Kong	Institute of Mathematics, The Chinese University of Hong Kong	2001
Russia	The St.-Petersburg State Technical University	2001
Hong Kong	City University of Hong Kong	2001
Canada	Yes! Canada Education Service Inc.	2001
France	Advanced Institute of Physics and Chemistry of Paris	2001
Italy	The University of Rome	2002
Hong Kong	Hong Kong University of Science and Technology	2002

Appendix 2: Sister Universities and Institutions of Xiamen University

America	Cornell University	The University of Oregon	Utica College of Syracuse University
	University of California	Dowling College	Willamette University
	Golden Gate University	University of Illinois at Urbana-Champaign	Calvin College
	Utah State University	South Illinois University	Emory University
	University of Baltimore	Institute of Tech. of West Virginia University	Montana Tech of the University of Montana
	University of San Francisco	University of Rhode Island	University of Washington
Australia	Australian National University	Victoria University of Wellington	Royal Melbourne Institute of Tech. University
	James Cook University		
Belgium	Vrije Universiteit Brussel	Universite Libre De Bruxelles	
Canada	Dalhousie University	Saint Mary's University	
England	University College Cardiff	The University of Hull	University of Ulster
	The University of Newcastle	University of Westminster	The University of Sussex
	University of Luton	The School of Social Sciences and Law, Oxford Brookes University	
France	Universite de Nice-Sophia Antipolis	Universite Montpellier Ⅱ	Universite de Franche - Comte
	Universite Jean Moulin – Lyon 3	University of Le Havre	L'Universite Paris X - Nanterre
	L'Ecole Europeenne de Chimie, Polymeres Et Materiaux de L'University Louis Pasteur de Strasbourg		
Holand	The Universiteit Van Amsterdam	Universiteit Leiden	
Indonesia	Hasanuddin University		
Israel	University of Haifa		
Italy	Istituto Universitario Orientale Di Napoli		
Japan	Soka University	Gunma University	Nagasaki University of Foreign Studies
	Ritsumeikan University	东京外国语大学	Meiji University

	Tohoku University		
Korea	Inha University	Ewha Womans University	Sungkyunkwan University
Malaysia	New Era College	University of Malaya	Han Chiang College
New Zealand	Victoria University of Wellington		
Norway	Norwegian University of Science and Technology		
Singapore	National University of Singapore	Nanyang Technology University	Singapore Management University
Thailand	Assumption University		
The Philippines	Ateneo De Manila University	University of Santo Tomas	University of Philippines
	University of East	De La Salle University	Centro Escolar University
	Philippine Normal University	University of Asia and the Pacific	
White Russia	Beylorussian State University	Institute of Electronics, Academy of Sciences of Belarus	
HongKong, China	City Polytechnic of HongKong	The Chinese University of HongKong	HongKong Baptist University
	University of HongKong		
Taiwan, China	Tamkang University	Tunghai University	Providence University
	National Kaohsiung University of Applied Sciences	Taiwan Ocean University	National Cheng Kung University